Listing of Claims

The following listing of claims will replace all prior versions, and listings, of claims in the subject application:

1. (currently amended) A solution jet type fabrication apparatus for fabricating a wiring pattern or a device, the solution jet type fabrication apparatus comprising:

a holder configured to hold a substrate horizontally to allow a wiring pattern or a device to be formed on said substrate;

a data input unit for supplying droplet ejection information;

a jet head for ejecting a droplet of a solution containing conductive fine particles onto [[a]] the substrate~~, so as to form a pattern,~~ by vaporizing a volatile ingredient of the solution, and allowing a solid component to remain on the substrate, to form the wiring pattern or the device in a forming area of the substrate in accordance with the droplet ejection information supplied by the data input unit; and

a driving unit that moves at least one of the jet head and the holder relatively to the other,

wherein the jet head is positioned above the substrate,

~~wherein the substrate is made from plastic or polymer film and has no liquid absorbing property, wherein the substrate has electrodes thereon,~~

wherein the jet head includes a nozzle from which the droplet is ejected onto said substrate and electrodes to connect each other, the nozzle being formed from a material that has a greater hardness than that of the conductive fine particles in the solution,

wherein the jet head has a droplet ejecting face for ejecting the droplet, and the droplet ejecting face faces the forming area of the substrate with a distance of 1mm to 3 mm from the

substrate,

wherein the droplet ejection speed of the jet head is faster than the relative moving speed between the jet head and the substrate,

wherein the nozzle has a size that is equal to or less than Φ20μm, ~~the nozzle satisfying a relation of 0.0001≤Dp/Do≤0.01, where Dp represents the diameter of each of the fine particles~~ each of the conductive fine particles has a size Dp equal to or larger than 0.0005 μm so that the conductive fine particles are dispersed in a stable state, and the size Dp is determined by a relationship Dp/Do≤0.01 so as to prevent clogging of the nozzle, and Do represents [[the]] a diameter of the nozzle,

wherein ~~each of the fine particles has a size that~~ the size D_P is equal to or less than the roughness of a surface of the substrate~~, wherein a thickness of the pattern after vaporizing the volatile ingredient of the solution is from the diameter Dp of the fine particle to 100μm, wherein a distance between the fine particles in the pattern is within ten times of the diameter Dp of the particle~~.

2. (original) The solution jet type fabrication apparatus as claimed in claim 1, wherein the jet head ejects the droplet using a mechanical displacement force.

3. (original) The solution jet type fabrication apparatus as claimed in claim 2, wherein the jet head ejects the droplet using the mechanical displacement force so that the droplet becomes spherical immediately before the droplet reaches the substrate.

4. (original) The solution jet type fabrication apparatus as claimed in claim 2, wherein the

jet head ejects the droplet using the mechanical displacement force so that the droplet has an elongated shape along the ejecting direction without a trailing droplet, and so that the length of the elongated droplet in the ejecting direction is no more than three times the length of the elongated droplet in a direction perpendicular to the ejecting direction.

Claims 5-7 (canceled).

8. (original) The solution jet type fabrication apparatus as claimed in claim 1, wherein the jet head ejects the droplet using a growth displacement force of a thermally generated bubble.

9. (currently amended) The solution jet type fabrication apparatus as claimed in claim 8, ~~further comprising: a~~ wherein the driving unit ~~for moving~~ moves at least one of the jet head and the substrate relatively to the other so that the velocity of the relative movement of the jet head and the substrate is no more than 1/3 of the velocity of the ejected droplet.

Claim 10 (canceled).

11. (original) The solution jet type fabrication apparatus as claimed in claim 8, wherein the jet head ejects the droplet using the growth displacement force of a thermally generated bubble so that the droplet has an elongated shape along the ejecting direction with a trailing droplet, and so that the length of the elongated droplet in the ejecting direction is no less than five times the length of the elongated droplet in a direction perpendicular to the ejecting direction.

12. (original) The solution jet type fabrication apparatus as claimed in claim 1, wherein the jet head includes a filter situated at an upstream location of the nozzle.

13. (currently amended) The solution jet type fabrication apparatus as claimed in claim 12, wherein the filter is situated at a position nearest to the nozzle for trapping a foreign particle with a size equal to or greater than 30 times [[the]] a diameter of the conductive fine particle.

Claims 14-32 (canceled).

33. (new) The solution jet type fabrication apparatus as claimed in claim 1, wherein the substrate is made from plastic or polymer film and has no liquid absorbing property, and wherein said electrodes are on said substrate.

34. (new) The solution jet type fabrication apparatus as claimed in claim 1, wherein a thickness of the pattern after vaporizing the volatile ingredient of the solution is from a diameter of the conductive fine particles to 100μm.

35. (new) The solution jet type fabrication apparatus as claimed in claim 1, wherein a distance between the conductive fine particles in the pattern is within ten times of a diameter of the conductive fine particles.

36. (new) A solution jet type fabrication apparatus for fabricating a wiring pattern or a

device, the solution jet type fabrication apparatus comprising:

a holder configured to hold a substrate horizontally to allow a wiring pattern or a device to be formed on said substrate;

a data input unit configured to supply droplet ejection information;

a jet head configured to eject a droplet of a solution containing conductive fine particles onto the substrate by vaporizing a volatile ingredient of the solution and allowing a solid component to remain on the substrate, to form the wiring pattern or the device in a forming area of the substrate in accordance with the droplet ejection information supplied by the data input unit; and

a driving unit configured to move at least one of the jet head and the holder relatively to the other,

wherein the jet head includes a nozzle from which the droplet is ejected onto said substrate and electrodes to connect each other, the nozzle has a size that is equal to or less than Φ20μm, and each of the conductive fine particles has a size Dp equal to or larger than 0.0005 μm so that the conductive fine particles are dispersed in a stable state.

37. (new) A solution jet type fabrication apparatus for fabricating a wiring pattern or a device, the solution jet type fabrication apparatus comprising:

a holder configured to hold a substrate horizontally to allow a wiring pattern or a device to be formed on said substrate;

a data input unit configured to supply droplet ejection information;

a jet head configured to eject a droplet of a solution containing conductive fine particles onto the substrate by vaporizing a volatile ingredient of the solution and allowing a solid

component to remain on the substrate, to form the wiring pattern or the device in a forming area of the substrate in accordance with the droplet ejection information supplied by the data input unit; and

a driving unit configured to move at least one of the jet head and the holder relatively to the other,

wherein the jet head includes a nozzle from which the droplet is ejected onto said substrate and electrodes to connect each other,

wherein the nozzle has a size that is equal to or less than $\Phi 20\mu m$, each of the conductive fine particles has a size Dp equal to or larger than 0.0005 μm so that the conductive fine particles are dispersed in a stable state, and the size Dp of the conductive fine particles is determined by a relationship $Dp/Do \leq 0.01$ so as to prevent clogging of the nozzle, where Do represents a diameter of the nozzle.